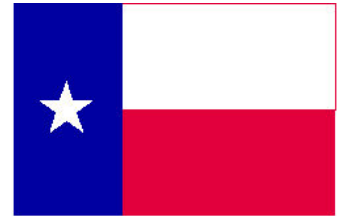




NOAA Research in Texas



TX-1 through 30 (Statewide)

Climate and Global Change Program

NOAA is responsible for providing climate information to the nation in order to prepare and protect climate sensitive sectors of society and the economy. To carry out this mission, NOAA's Climate and Global Change Program conducts focused scientific research to understand and predict variations of climate. The program is comprised of a number of research elements, each focusing on a specific aspect of climate variability. Taken together, this research contributes to improved predictions and assessments of the effects of climate variability and change on different environments over a continuum of time scales from season to season, year to year, and over the course of a decade and beyond. This research is accomplished through the strong support of the academic and private sectors, as well as NOAA and other federal laboratories. In FY 2001, NOAA's Climate and Global Change Program provided approximately \$479,791 in support of climate research in the State of Texas. For more information please visit <http://www.ogp.noaa.gov>

TX-2, 5, 9, 15, 17, and 22 (Summerfield, Palestine, Galveston, San Antonio, Aransas Pass, Jayton, and Angleton)

Forecast Systems Laboratory GPS Meteorological Observing Systems

NOAA's Forecast Systems Laboratory (FSL) operates a rapidly expanding network of GPS Meteorological (GPS-Met) Observing Systems to monitor the total quantity of precipitable water vapor in the atmosphere. Currently, there are 93 systems over the contiguous 48 states and Alaska, and plans are being made to extend these observations to Hawaii, Puerto Rico, the Caribbean Islands, and Central America. Water vapor is an important but under-observed component of the atmosphere that plays a major role in severe weather events and the global climate system. GPS-Met systems provide accurate water vapor measurements under all weather conditions, including thick cloud cover and precipitation, and do so at very low cost. The major reason why this system is so economical is that the network is being developed by FSL in cooperation with federal, state and local government agencies, universities, and the private sector. The GPS stations provide high-accuracy surveying and navigation services for National defense, automated agriculture, safe land and marine transportation, government infrastructure management, and 911 emergency response services. Fortunately, these systems can also be used for meteorology with the addition of surface weather sensors. GPS-Met systems in Texas are operated by NOAA near Palestine and Jayton, with one planned near Austin. Additional sites are operated by the U.S. Department of Transportation near Summerfield and Angleton, by the U.S. Coast Guard near Aransas Pass and Galveston, and by Ford Engineering, Inc. near San Antonio. For more information please visit <http://www.gpsmet.noaa.gov/jsp/index.jsp>

TX-7, 8, 9, 14, 18, 22, 27, 29 (Based in College Station - serves entire Texas coast)

National Sea Grant Program

Texas Sea Grant College Program

For the past three decades, the Texas Sea Grant College Program, part of the National Sea Grant Program, has responded to state and national needs concerning the marine environment in an effort to make sure that having sustainable marine resources and continued economic development are not mutually exclusive goals. Texas Sea Grant is currently supporting research that addresses two research priorities: coastal ecosystem health and coastal economic development. Examples of research include stock assessment of sperm whales in the Gulf of Mexico, effects of contaminants on red drum survival skills, identifying the processes responsible for hypoxia in the Gulf of Mexico, corals as monitors of environmental change, and a survey and inventory of the fishes of the Gulf of Mexico. The Program supports faculty involved in marine-related research not only at Texas A&M University, but also at institutions of higher education throughout the state. While Texas Sea Grant's focus is on the citizens of its state, it is also dedicated to developing and distributing information to regional, national, and even global audiences through its communication, outreach and education programs. The public, industry and policymakers are kept informed on current issues through the quarterly magazine *Texas Shores*; news releases; brochures and flyers; CD-ROMs; and proceedings and fact sheets. The first of a planned five low-power radio installation is now in place on the upper Texas coast. Texas Sea Grant's outreach component, the Marine Advisory Service, includes six county marine agents in seven coastal counties who are involved in everything from outdoor recreation to petrochemical production. Seven marine specialists provide expertise in environmental science, aquaculture, marine business, marine education, fisheries, seafood technology and economics, and marine policy. The Texas Sea Grant College Program is a member of the Gulf of Mexico Aquaculture Consortium and cooperates with other Sea Grant programs in MarinaNet and HazNet. In FY 2001, Texas Sea Grant projects received funding of approximately \$2 million from the National Sea Grant Program. For more information please visit <http://texas-sea-grant.tamu.edu>

TX-7, 8, 9, 14, 18, 22, 27, 29 (coast)

**Atlantic Oceanographic and Meteorological Laboratory
Hurricane Research**

The Atlantic Oceanographic and Meteorological Laboratory's Hurricane Research Division (HRD) conducts an annual field program during peak hurricane season, flying NOAA's two WP-3D Hurricane Hunter aircraft into all hurricanes threatening US coastlines. Dropsondes and onboard radar are used to profile hurricane winds and storm structure. HRD scientists then transmit real-time information to the National Hurricane Center (NHC) at the Tropical Prediction Center, one of NOAA's National Centers for Environmental Prediction. An HRD workstation at NHC processes the aircraft data to generate products for hurricane specialists. NOAA's G-IV jet is also used in the field program to profile wind currents surrounding and influencing the storm's track. HRD scientists incorporate these and other data to create wind analyses of hurricanes. These analyses are crucial in identifying regions of strong winds in the storm and are distributed to local emergency managers for hurricane warning and evacuation determinations. HRD scientists are also studying hurricane winds before and after landfall to help determine expected wind impacts as a hurricane moves over land. For more information please visit <http://www.aoml.noaa.gov/hrd/index.html>

TX-7, 8, 9, 14, 18, 22, 27, 29 (coastal waters)

National Undersea Research Program

National Undersea Research Center for the Southeastern U.S. and Gulf of Mexico

The National Undersea Research Center for the Southeastern U.S. and Gulf of Mexico is located at the University of North Carolina at Wilmington. It is one of six regional centers supported by the National Undersea Research Program (NURP). The center supports and conducts undersea research throughout the South Atlantic Bight (NC to FL), Florida Keys, and Gulf of Mexico. The Center provides research support for in situ oceanography conducted by divers, submersibles and remotely operated vehicles. Key research includes studies of the health of coastal reef systems in the Florida Keys, studies of marine fisheries population dynamics/habitat associations/recruitment processes, support of research on lithospheric resources and processes (including those related to offshore oil drilling, gas hydrates, climate change, sea level history, and sea floor evolution) and carbon cycling as it concerns the air-sea interaction in global warming. In FY 2001, the Center at Wilmington received funding of \$2.64 million. For more information please visit <http://www.uncwil.edu/nurc/>

TX-11 (Moody)

Climate Monitoring and Diagnostic Laboratory

Tall Tower Measurements

NOAA's Climate Monitoring and Diagnostic Laboratory (CMDL) operates trace gas monitoring sites at tall television transmitter towers in Wisconsin and Texas. The sites were established to extend CMDL's monitoring network into the interior of North America in order to provide data to aid estimation of the net carbon balance of the continent. Variations of trace gases, especially carbon dioxide (CO₂), are largest near the ground, so existing tall (> 400 meters) transmitter towers are utilized as platforms for *in situ* and flask sampling for atmospheric trace gases. The tower site in Texas is the KWKT-TV transmitter located near the town of Moody, 20 miles south of Waco. The tower is owned by Pinnacle Towers Inc. which charges a nominal fee for use of the facility. CMDL monitors CO₂ concentrations on the tower at several heights up to 500 meters above the ground, and also measures wind speed and direction, temperature, humidity, rainfall, solar radiation and barometric pressure. The Blackland Research and Extension Center of Texas A&M University (TAMU), located in Temple, has helped maintain the site and collect flask samples since early 2001. CMDL scientists are also working with local researchers at TAMU and the University of Texas at Austin on research proposals to extend the scope of the work at this site in order to improve understanding of the processes that regulate exchange of CO₂ between the atmosphere and the local vegetation. A major research question is whether the encroachment of woody vegetation into the regional rangelands constitutes a significant net sink for atmospheric CO₂, which could offset some of the CO₂ emissions from combustion of fossil fuels. More information, photos and links can be found on the CMDL website: <http://www.cmdl.noaa.gov/hats/miscprojects/magnett1.html>

For further information about these and other NOAA programs, please contact NOAA's Office of Legislative Affairs at (202) 482-4981.

February 2002